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UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF CALIFORNIA  
SAN JOSE DIVISION

13 HTC CORPORATION and HTC  
14 AMERICA, INC.,  
15 Plaintiffs,  
16 v.  
17 TECHNOLOGY PROPERTIES  
18 LIMITED, PATRIOT SCIENTIFIC  
19 CORPORATION, and ALLIACENSE  
20 LIMITED,  
21 Defendants.

Case No. 5:08-CV-00882 PSG  
(Related to Case No. 5:08-CV-00877 PSG)

**PLAINTIFFS' NOTICE OF MOTION AND  
MOTION FOR SUMMARY JUDGMENT OF  
NON-INFRINGEMENT AND NO WILLFUL  
INFRINGEMENT OF U.S. PATENT  
NO. 5,809,336**

Complaint Filed: February 8, 2008  
Trial Date: September 23, 2013

Date: August 13, 2013  
Time: 10:00 a.m.  
Place: Courtroom 5, 4th Floor  
Judge: Hon. Paul S. Grewal

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## **NOTICE OF MOTION AND MOTION**

2 PLEASE TAKE NOTICE that Plaintiffs HTC Corporation and HTC America, Inc.  
3 (collectively “Plaintiffs” or “HTC”) move, pursuant to Federal Rule of Civil Procedure 56, for (1)  
4 summary judgment of non-infringement for all of the HTC products accused under U.S. Patent No.  
5 5,809,336 (the “’336 patent”) by Defendants Technology Properties Limited, Alliacense Limited,  
6 and Patriot Scientific Corporation (collectively “TPL” or “Defendants”); and (2) summary  
7 judgment of no willful infringement of the ’336 patent. This Motion is filed pursuant to the  
8 briefing schedule established by the Court’s order of July 3, 2013, as amended on July 12, 2013.  
9 (Doc. Nos. 452, 456.) This Motion is based on the Memorandum of Points and Authorities set  
10 forth below, the supporting declaration of Kyle D. Chen (“Chen Decl.”) and exhibits thereto, and  
11 such other matters as may be presented at the hearing on HTC’s motion and allowed by the Court.

## **MEMORANDUM OF POINTS AND AUTHORITIES**

## I. INTRODUCTION

14 TPL’s infringement case against HTC fails because TPL cannot establish at least two  
15 claim limitations recited in every independent claim. The accused HTC products do not practice  
16 these limitations, and TPL has no evidence that they do. Summary judgment of non-infringement  
17 is therefore warranted.

18       First, every independent claim of the '336 patent recites an “entire ring oscillator variable  
19 speed system clock” (claims 1, 11), an “entire oscillator” (claims 6, 13), or “an entire variable  
20 speed system clock” (claims 10, 16) disposed on the same integrated circuit substrate as the CPU.  
21 (These terms are collectively referred to as the “entire” terms in this brief.) Two other judges have  
22 held that the patentee during prosecution expressly disclaimed any microprocessor system in  
23 which the clock or oscillator that clocks the central processing unit (“CPU”) relies upon a  
24 reference signal from an external crystal.

25                   Most recently, in a parallel International Trade Commission (“ITC”) Investigation No.  
26 337-TA-853 (the “ITC investigation”), Administrative Law Judge E. James Gildea issued an  
27 exhaustive 75-page claim construction order in which he agreed with and adopted HTC’s  
28 constructions for the same “entire” limitations at issue in this motion. Judge Gildea’s order

1 involved the identical asserted claims of the '336 patent and, although it is not controlling on this  
 2 Court, is highly persuasive in that it thoroughly evaluates these terms from the '336 patent. Before  
 3 that, Judge Ward of the Eastern District of Texas (now retired) construed "*entire* ring oscillator  
 4 variable speed system clock" (claims 1, 11) from the '336 patent and similarly found that the  
 5 patentee disclaimed an arrangement in which the on-chip ring oscillator directly relies upon a  
 6 reference signal from an external crystal. Both judges correctly found that the patentee made clear  
 7 and unambiguous disclaimers in order to obtain the '336 patent. And even TPL, in several briefs it  
 8 has filed with this Court, has acknowledged these same disclaimers. Under those disclaimers,  
 9 HTC's accused products cannot infringe and summary judgment of non-infringement is warranted.

10       Second, each independent claim of the '336 patent requires that the speed of the CPU  
 11 clock "vary" with the process, voltage, and temperature ("PVT") parameters. TPL offers no  
 12 evidence whatsoever that HTC's accused products meet this limitation. TPL's expert relies  
 13 entirely on speculation and "generally accepted principles" relating to semiconductor circuits, but  
 14 provided no specific factual analysis and no application of those "generally accepted principles" to  
 15 any HTC product. TPL did not perform any testing of the accused products. And when TPL's  
 16 expert, who has worked on this and the related matters since 2007, was asked at his deposition if  
 17 he even looked into whether it would be possible to perform those tests, he remarkably responded:  
 18 "I haven't. I haven't had time to do it."

19       But HTC did perform those tests. They showed that the accused products do not exhibit  
 20 the variation required by the claims. The accused CPU clocks are so stable, in fact, that they fall  
 21 within what one of ordinary skill in the art would regard as "fixed" speed clocks. Summary  
 22 judgment of non-infringement is therefore warranted with respect to this claim element as well.

23       TPL cannot show infringement—let alone willful infringement—of the '336 patent. The  
 24 undisputed record establishes that HTC's accused products not only fail to satisfy these claim  
 25 limitations, but also fall squarely within the realm of the prior art microprocessor systems that the  
 26 patentee disclaimed during prosecution. Because TPL's claims cannot be (and have not been)  
 27 construed to recapture subject matter it disclaimed, HTC cannot infringe and summary judgment  
 28 should be granted with respect to all claims of the '336 patent.

1       **II. BACKGROUND**2       **A. Relevant Procedural History**

3           HTC filed this declaratory judgment action on February 8, 2008. TPL, after a protracted  
 4 and failed attempt to transfer this action to the Eastern District of Texas, counterclaimed for  
 5 infringement of U.S. Patent Nos. 5,440,749 (the “749 patent”), 5,530,890 (the “890 patent”)  
 6 5,809,336 (the “336 patent”), and 6,598,148 (the “148 patent”) (collectively, the “patents-in-  
 7 suit”). (*See* Doc No. 60.) This case was delayed during its pendency due, in large part, to TPL’s  
 8 attempt to transfer the actions, reexaminations of the patents-in-suit, and start-and-stop claim  
 9 construction proceedings caused by two judicial reassessments.

10           More specifically, this case was originally assigned to Judge Fogel but reassigned to Chief  
 11 Judge Ware on September 1, 2011. (Doc. No. 320.) At the time of the first reassignment, the  
 12 parties had completed briefing on claim construction and were awaiting a claim construction  
 13 hearing. Judge Ware directed the parties to redo claim construction briefing and, on June 12,  
 14 2012, issued a “First Claim Construction Order” construing a handful of disputed terms, declining  
 15 to consider certain other terms, and requesting further briefing on the term “ring oscillator” in the  
 16 ’336 patent. (Doc. No. 364.) With respect to the three “entire” terms from the ’336 patent,  
 17 however, Judge Ware construed only one of those terms (“an entire variable speed system clock”)  
 18 and did not address the other two. On August 15, 2012, in light of Judge Ware’s retirement, this  
 19 case was reassigned to Judge Grewal. (Doc. No. 370.)

20           HTC filed its supplemental brief on October 21, 2012 addressing Judge Ware’s questions  
 21 regarding the term “ring oscillator” (a portion of one of the three “entire” terms of the ’336 patent),  
 22 and specifically noted that Judge Ware did not construe the three “entire” terms and that it may  
 23 therefore seek construction following resolution of the “ring oscillator” issue. (*See* Doc. No. 394,  
 24 at 1 n.1.) On December 4, 2012, Judge Grewal issued a further claim construction order  
 25 responding to the additional briefing ordered by Judge Ware, and ruled on various motions for  
 26 reconsideration filed on various aspects of Judge Ware’s claim construction rulings. (Doc.  
 27 No. 410.)

1           On December 7, 2012, counsel for HTC contacted counsel for TPL and indicated that  
 2 following Judge Grewal’s construction of “ring oscillator,” it intended to file a motion to construe  
 3 the three “entire” limitations from the ’336 patent that had not been addressed. (*See* Declaration of  
 4 Kyle D. Chen in Support of Motion for Summary Judgment (“Chen Decl.”), Ex. 2 (December  
 5 2012 e-mail chain).) After further communications between counsel, HTC notified TPL that it  
 6 believed the issues relating to the “entire” terms could more efficiently and effectively be taken up  
 7 by the Court in connection with a summary judgment motion of non-infringement. (*Id.*) TPL  
 8 responded: “Sounds good. Thanks.” (*Id.*)

9           **B. Proceedings in the Parallel ITC Investigation**

10          As this case was proceeding in early 2013, the exact same claim construction issues  
 11 regarding the “entire” limitations were being litigated in the ITC investigation before Judge  
 12 Gildea. On April 18, 2013, after extensive briefing from TPL, HTC, and the other respondents and  
 13 the ITC Staff, and following a full day hearing, Judge Gildea issued a 75-page claim construction  
 14 order construing various terms from the ’336 patent—including all three of the “entire” terms from  
 15 the ’336 patent. (Chen Decl. Ex. 3 (04/18/2013 Public ITC Order).) In his order, Judge Gildea  
 16 adopted HTC’s proposed constructions for all three of the “entire” terms. (*Id.* at 37-42.) Judge  
 17 Gildea specifically rejected TPL’s construction on the ground that it “does not convey the essential  
 18 point made by the applicants in seeking to gain acceptance of the examiner for their purported  
 19 invention by asserting that the ring oscillator variable speed clock ‘does not utilize external  
 20 components.’” (*Id.* at 39 (citation omitted).)

21          On June 4, 2013, TPL served its Final Infringement Contentions and the opening report of  
 22 its expert on infringement issues, Dr. Vojin G. Oklobdzija. At that time, TPL also withdrew its  
 23 claims of infringement as to the ’148 and ’749 patents, and as such, is only asserting the ’336 and  
 24 ’890 patents against HTC. Dr. Oklobdzija was deposed on July 13 and 15, 2013.

25           **C. Overview of ’336 Patent**

26          Because this Court has received multiple rounds of briefing on the ’336 patent, (*see* Doc  
 27 Nos. 245, 349, 394), HTC will provide only a brief summary of the patent here:

1       To control the pace of operation of a microprocessor, its CPU must be driven by a “clock”  
 2 that generates a timing signal. The ’336 patent explains that traditional microprocessors relied on  
 3 an *external, fixed speed* crystal to generate the internal timing signal for the CPU. The alleged  
 4 invention removes reliance on such external, fixed speed crystal and instead relies on an *internal,*  
 5 *variable speed* clock or oscillator located entirely inside the integrated circuit substrate.

6       In particular, the ’336 patent is directed towards a variable speed clock located entirely  
 7 inside the same integrated circuit substrate as the CPU. (’336, 16:60-17:2.)<sup>1</sup> The ’336  
 8 specification explains that a high speed microprocessor must “operate over wide temperature  
 9 ranges, wide voltage swings, and wide variations in semiconductor processing,” which “all affect  
 10 transistor propagation delays.” (*Id.* at 16:44-48.) These parameters—“process,” “voltage,” and  
 11 “temperature”—are referred to as “PVT” parameters.

12       As the specification and the prosecution history explain, prior art microprocessor systems  
 13 relied on an external, fixed speed crystal to generate the internal clock signal for the CPU. (’336,  
 14 16:48-50, 17:12-13; *see* Part IV.A.1, *infra*.) Because the speed of the CPU clock signal is fixed  
 15 and does not vary based on PVT parameters, it must be designed to clock the CPU at a speed that  
 16 is slow enough to ensure error-free operation during worst-case conditions for all possible PVT  
 17 parameters. (*Id.*) As a result, prior art microprocessor systems “must be clocked a factor of two  
 18 slower than their maximum theoretical performance, so they will operate properly in worse [sic]  
 19 case conditions.” (’336, 16:50-53.)

20       To overcome this purported problem, the ’336 patent teaches a microprocessor system in  
 21 which the CPU is clocked by an internal clock or oscillator that adjusts its speed to match the  
 22 CPU’s maximum capabilities automatically at any given time under the then existing PVT  
 23 parameters. (’336, 3:26-34 (Summary of the Invention).) The other devices with which the CPU  
 24 must communicate, however, cannot operate at a variable speed, so the claimed microprocessor  
 25 system requires a second or external clock that is independent of the CPU’s variable speed clock or  
 26

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27  
 28       <sup>1</sup> A copy of the ’336 patent is attached as Exhibit 1 to the Chen Declaration.

1 oscillator. (*Id.*) The '336 patent explains that this second or external clock connected to the  
 2 input/output (I/O) interface is a fixed speed crystal clock, which is the same type of clock relied  
 3 upon by prior art systems to also clock the CPU. ('336, 17:32-34.)

4 Unlike the I/O interface's fixed speed crystal clock that varies so little in response to the  
 5 PVT parameters,<sup>2</sup> the frequency (*i.e.*, speed) of the claimed variable speed clock or oscillator for  
 6 the CPU varies significantly and is **determined** by the PVT parameters. ('336, 16:59-60 ("The ring  
 7 oscillator frequency is determined by the parameters of temperature, voltage, and process . . ."),  
 8 17:32-34 ("By decoupling the variable speed of the CPU **70** from **the fixed speed of the I/O**  
 9 **interface 432**, optimum performance can be achieved by each.") (emphasis added), and Fig. 17  
 10 (crystal clock **434**.) For example, the '336 specification discloses that the speed of the variable  
 11 speed clock will be 100 megahertz at room temperature, but will slow to 50 megahertz if the  
 12 temperature rises to 70°C/158° F, and may vary by as much as a factor of four (*i.e.*, by as much as  
 13 400%) depending on all PVT parameters. ('336, 16:59-63, 17:21-22.)

14 **III. LEGAL STANDARD FOR SUMMARY JUDGMENT**

15 To evaluate claims of patent infringement, the Court first construes the claims as a matter  
 16 of law and then compares the claims as construed to the accused device(s). *See Bayer AG v. Elan*  
 17 *Pharm. Research Corp.*, 212 F.3d 1241, 1247 (Fed. Cir. 2000). The absence of even a single claim  
 18 limitation precludes a finding of infringement. *Telemac Cellular Corp. v. Topp Telecom, Inc.*, 247  
 19 F.3d 1316, 1330 (Fed. Cir. 2001). To prove infringement, TPL bears the burden of proving that  
 20 the accused products meet each element of each asserted claim. *Id.* A party seeking summary  
 21 judgment does not need to present affirmative evidence of non-infringement. *See Celotex Corp. v.*  
 22 *Catrett*, 477 U.S. 317, 326 (1986). To obtain summary judgment of non-infringement, "nothing  
 23 more is required than the filing of a summary judgment motion stating that the patentee had no  
 24 evidence of infringement and pointing to the specific ways in which accused systems did not meet  
 25 the claim limitations." *Exigent Tech., Inc. v. Atrana Solutions, Inc.*, 442 F.3d 1301, 1309 (Fed.

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26  
 27 <sup>2</sup> For example, named inventor Russell Fish, III testified that although crystal frequencies will  
 28 vary slightly with temperature, "it is a fixed clock for all intents and purposes" because the  
 "crystal is as fixed as you can make it." (Chen Decl. Ex. 4 (Fish ITC Depo.) at 145:21-24.)

1 Cir. 2006). This case presents a particularly compelling case for summary judgment because there  
 2 is no material disagreement between TPL and HTC (or their respective experts) about how the  
 3 accused HTC products operate. The facts required to establish entitlement to summary judgment  
 4 were readily admitted or acknowledged by TPL's own expert. The Federal Circuit has repeatedly  
 5 emphasized that such a case is particularly suited to summary judgment. *See, e.g., MyMail, Ltd. v.*  
 6 *Am. Online, Inc.*, 476 F.3d 1372, 1378 (Fed. Cir. 2007).

7 **IV. HTC DOES NOT INFRINGE THE '336 PATENT**

8 The purported "problem" that the '336 patent was attempting to solve is reflected in at  
 9 least two express limitations in every asserted claim: (1) the "entire" clock limitations and (2) the  
 10 requirement that the speed of the clock or oscillator clocking the CPU be "varying" with the PVT  
 11 parameters. Both of these limitations go to the core of the purported problem addressed by the  
 12 '336 patent. TPL cannot show that the accused HTC products satisfy either of these claim  
 13 limitations, literally or under the doctrine of equivalents.

14 The reason HTC does not infringe is straightforward: HTC's accused products did not  
 15 adopt the "solution" described in the '336 patent. Those products, if anything, embrace the  
 16 purported "problem" the '336 patent sought to solve. HTC's accused products, like the prior art,  
 17 use a fixed speed clock that relies on an external crystal. And like the prior art, those products  
 18 generate a stable and fixed clock signal frequency that exhibits only minimal variation based on a  
 19 wide range of PVT parameters—the direct opposite of the system described in the '336 patent.

20 In summary, the HTC accused products, much like the prior art, rely on a fixed-frequency,  
 21 crystal-based clocking system that intentionally excludes the purported benefit of varying  
 22 frequency based on PVT parameters.

23 **A. The Accused HTC Products Do Not Satisfy the "Entire" Limitations**

24 Every independent claim of the '336 patent recites an "entire" ring oscillator, oscillator, or  
 25 variable speed clock disposed on the same substrate as the CPU. These "entire" terms fall into the  
 26 following three groups:

27 • "an entire ring oscillator variable speed system clock in said single integrated circuit"  
 28 (claims 1, 11);

- “an entire oscillator disposed upon said integrated circuit substrate” (claims 6, 13); and
- “an entire variable speed system clock disposed upon said integrated circuit substrate” (claims 10, 16).

To convince the examiner to allow their claims over invalidating prior art, as explained below, the applicants repeatedly and unambiguously told the PTO that their allegedly inventive microprocessor system did not rely on any external crystal or frequency generator of a fixed speed, and that their internal clock or oscillator speed is variable. Those clear statements and disclaimers must be reflected in the construction of the three “entire” terms. And because the only infringement theory proffered for those limitations relies on an interpretation that was expressly disclaimed, the Court should grant summary judgment of non-infringement.

1. The “Entire” Limitations Should Be Construed To Exclude Reliance on a Control Signal or an External Crystal/Clock Generator To Generate a Clock Signal

The first step in any infringement analysis is to construe the disputed language of the asserted claim. *Freeman Seating Co. v. Am. Seating Co.*, 420 F.3d 1350, 1356-57 (Fed. Cir. 2005). Judge Ware construed only one of the “entire” terms prior to his retirement. As the Federal Circuit has observed, “district courts may engage in a rolling claim construction, in which the court revisits and alters its interpretation of the claim terms as its understanding of the technology evolves.” *Pressure Prods. Med. Supplies, Inc. v. Greatbatch Ltd.*, 599 F.3d 1308, 1316 (Fed. Cir. 2010). This Court should now address all three “entire” limitations together and, as explained below, should adopt the construction adopted by Judge Gildea for all three terms.<sup>3</sup> Because the construction of the “entire” limitations is fundamental to the question of infringement, the Court should resolve this issue now. *See O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co., Ltd.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008) (“When the parties present a fundamental dispute regarding the scope of a claim term, it is the court’s duty to resolve it.”).

<sup>3</sup> Although HTC believes that this Court should apply Judge Gildea’s consistent constructions across all three “entire” terms, as explained in Part IV.A.2, below, summary judgment of non-infringement of claims 10 and 16 would also be warranted under Judge Ware’s construction of the single “entire” term that he construed from those claims.

1                   HTC has proposed a set of consistent and parallel constructions of the three “entire” terms  
 2 as set forth below:

3 4 Claim Term from the '336 Patent	5 6 7 8 9 10 11 12 13 HTC's Proposed Construction (Also Adopted by Judge Gildea)
5 6 7 8 9 10 11 12 13 an entire ring oscillator variable speed system clock in said single integrated circuit (claims 1, 11)	a ring oscillator variable speed system clock that is located entirely on the same semiconductor substrate as the CPU and does not rely on a control signal or an external crystal/ clock generator to generate a clock signal
8 9 10 11 12 13 “an entire oscillator disposed upon said integrated circuit substrate” (claims 6, 13)	an oscillator that is located entirely on the same semiconductor substrate as the central processing unit and does not rely on a control signal or an external crystal/ clock generator to generate a clock signal
11 12 13 “an entire variable speed system clock disposed upon said integrated circuit substrate” (claims 10, 16)	a variable speed clock that is located entirely on the same semiconductor substrate as the CPU and does not rely on a control signal or an external crystal/ clock generator to generate a clock signal

14                   The key component of HTC’s proposal is that each of the “entire ring oscillator,” “entire  
 15 oscillator,” and “entire variable speed system clock” does not “rely on a control signal or an  
 16 external crystal/ clock generator to generate a clock signal.” This requirement captures the clear  
 17 disclaimers made by the applicants during the prosecution of the ’336 patent and is consistent with  
 18 the specification’s teachings and its criticisms of the prior art. This issue goes to the heart of this  
 19 case as every accused ’336 product includes an off-chip, fixed speed crystal that controls the  
 20 frequency of the alleged on-chip clock or oscillator. Because the applicants clearly and  
 21 unambiguously disclaimed on-chip oscillators and clocks that rely on external off-chip crystals and  
 22 off-chip clock generators, HTC’s proposed constructions should be adopted.

23                   a.     **The Specification Describes the Importance of a Variable Speed  
 24 Clock that Does Not Rely on an External Crystal or External  
 Frequency Generator**

25                   One of the key features recited in the claims is the requirement that the “entire” variable  
 26 speed clock or oscillator be located on the same integrated circuit substrate as the CPU that it  
 27 clocks. The specification makes clear that, as a consequence of locating both the variable speed  
 28 clock or oscillator and the CPU on the same substrate, the speed of such clock or oscillator will

1 vary based on the PVT (process, voltage, and temperature) parameters to which the integrated  
2 circuit is then subjected. ('336, 16:59-60, 65-67, 17:5-10, 19-22.) Performance of the CPU is  
3 thereby allegedly optimized such that the "CPU **70** will always execute at the maximum frequency  
4 possible, but never too fast." ('336, 16:67-17:2.)

5 In doing so, the specification describes an alleged improvement over the prior art solution  
6 of clocking a CPU with a fixed clock whose frequency is controlled by an external fixed speed  
7 crystal or clock generator. As the specification explains, this fixed speed clock is always set at a  
8 frequency well below the maximum theoretical frequency at which the CPU can operate under  
9 optimal PVT parameters because, by definition, a fixed speed clock cannot vary its speed with the  
10 PVT parameters. ('336, 16:44-53.) This setting is necessary to account for times when the CPU is  
11 operating under the worst-case PVT parameters. (*Id.*) But according to the '336 patent, setting the  
12 frequency at this lower level is inefficient. (*Id.*)

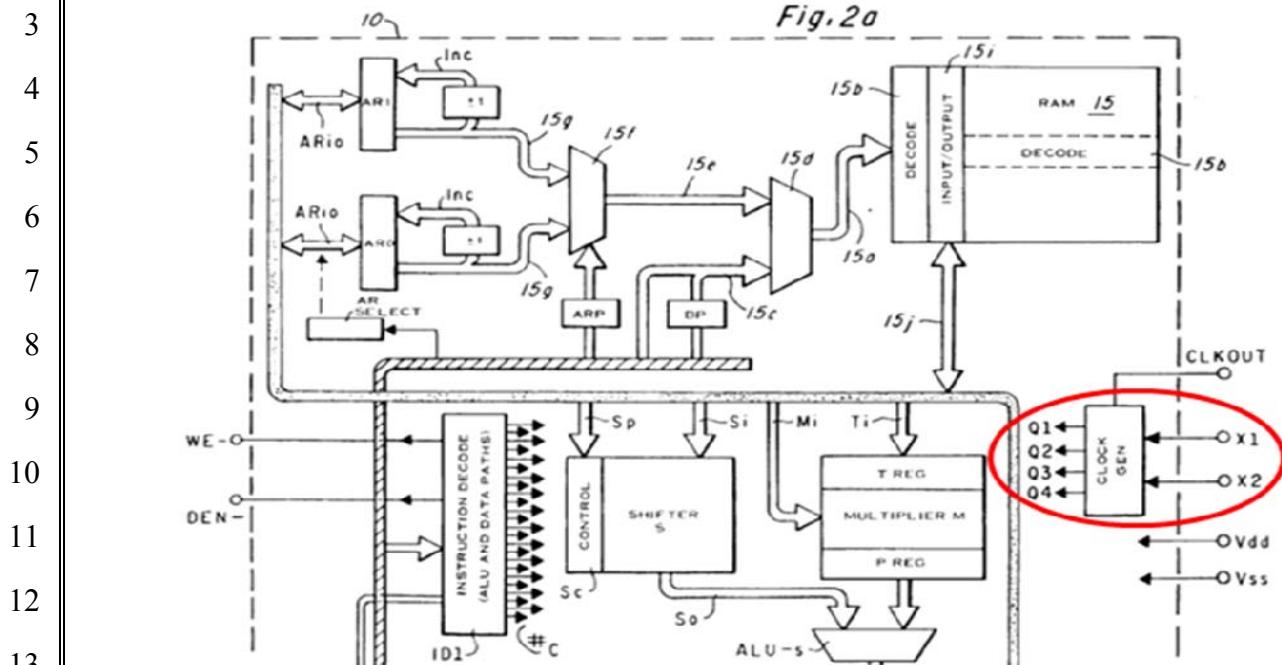
13        The claimed invention thus seeks to overcome this alleged inefficiency by fabricating the  
14    CPU and its clock entirely on the same substrate so that the PVT parameters affect both the CPU  
15    and the clock in the same way, without the CPU clock being controlled by an external fixed speed  
16    clock source. (*Id.* at 16:44-17:10, 19-22.) As a result, the CPU and clock's respective frequencies  
17    automatically vary in response to changes in the PVT parameters. (*Id.*)

**b. The Applicants Repeatedly Disclaimed Reliance on External Crystals and External Frequency Generators**

20 During the original prosecution of the '336 patent, the applicants repeatedly distinguished  
21 their purported invention from the prior art on the basis that their on-chip clock and on-chip  
22 oscillator do not rely on an external crystal or an external frequency generator. In doing so, the  
23 applicants clearly and unambiguously disclaimed any clock or oscillator, even though fabricated  
24 on the same substrate as the CPU, that relies on an external crystal or frequency generator.

25 Specifically, during the original prosecution, the PTO issued a non-final rejection based  
26 on U.S. Patent No. 4,503,500 to Magar (“Magar”), Fig. 2a of which is reproduced below. (Chen  
27 Decl. Ex. 5 ('336 prosecution history, Apr. 3, 1997 rejection) (TPL85300002433-34).) In his  
28 rejection, the examiner asserted that the “CLOCK GEN” (clock generator) circuitry in Fig. 2a of

1 Magar was fabricated on the same microprocessor substrate 10 as the CPU, as required by the  
 2 claims. (*Id.* at 2 (TPL85300002434).) See Magar, Fig. 2a reproduced below (red circle added).



In response, the applicants attempted to distinguish Magar on the basis that an external off-chip crystal (connected to the X1 and X2 inputs in the figure above) drove the clock in Magar:

A review of the Magar reference shows that it is apparently no more pertinent than prior art acknowledged in the application, in that ***the clock disclosed in the Magar reference is in fact driven by a fixed frequency crystal, which is external to the Magar integrated circuit.***

(Chen Decl. Ex. 6 ('336 prosecution history, July 7, 1997 Amendment) at 2 (emphasis added) (TPL85300002426).) The applicants further emphasized the difference between the claimed variable speed clock and Magar's clock generator's reliance on the frequency of an external crystal:

Contrary to the Examiner's assertion in the rejection that 'one of ordinary skill in the art should readily recognize that the speed of the cpu and the clock vary together due to manufacturing variation, operating voltage and temperature of the IC [integrated circuit],' one of ordinary skill in the art should readily recognize that the speed of the CPU and clock ***do not*** vary together due to manufacturing variation, operating voltage, and temperature of the IC in the Magar processor . . . ***This is simply because the Magar microprocessor clock is frequency controlled by a crystal which is also external to the microprocessor. Crystals are by design fixed frequency devices whose oscillation speed is designed to be tightly controlled and to vary minimally due to variations in manufacturing, operating***

*voltage and temperature. The Magar microprocessor in no way contemplates a variable speed clock as claimed.*

3 (*Id.* at 3-4 (second emphasis added) (TPL85300002427-28).) Through these exchanges, the  
4 applicants unambiguously disclaimed clocks and oscillators that rely on an external crystal for  
5 frequency control.

6 The PTO subsequently issued a second rejection based on Magar. In response, the  
7 applicants amended their claims to explicitly require that *the entire* oscillator/clock be on the same  
8 integrated circuit substrate as the CPU.<sup>4</sup> (Chen Decl. Ex. 7 ('336 prosecution history, Feb. 10,  
9 1998 Amendment) at 1-2 (TPL85300002399-400).) Along with this amendment, the applicants  
10 again tried to distinguish Magar from the claimed invention, arguing that Magar's clock generator  
11 could not operate properly without the use of an external component such as a crystal. In doing so,  
12 the applicants directed the examiner to Magar's disclosure at 15:26-27, which states that "chip 10  
13 includes a clock generator 17 which has two external pins X1 and X2 to which a crystal (or  
14 external generator) is connected." (*Id.* at 4 (TPL85300002402).) The applicants then, consistent  
15 with their earlier statements, further distinguished an external crystal by stating:

16 [W]hile most of Magar's clock (generator) circuitry is on the IC, ***the entire oscillator, which because it requires an external crystal, is not.***

18 (*Id.* at 4 (emphasis added) (TPL85300002402).) The applicants reinforced their disclaimers by  
19 identifying “the essential difference” between Magar’s fixed-frequency clock and the variable  
20 speed clock of the ’336 patent—that Magar’s clock relies on an external crystal while the  
21 frequency of the ’336 clock (in Figure 18) is determined by PVT parameters:

22 The signals PHASE 0, PHASE 1, PHASE 2 and PHASE 3 in Applicants' Fig. 18  
23 are synonymous with Q1, Q2, Q3 and Q4 depicted in Magar Fig. 2a. The  
24 ***essential difference*** is that the ***frequency or rate of the PHASE 0, PHASE 1,***  
***PHASE 2 and PHASE 3 signals is determined by the processing and/or***

<sup>4</sup> Then pending claim 19 was amended to recite “an entire ring oscillator variable speed system clock in said single integrated circuit,” claim 73 was amended to recite “an entire oscillator disposed upon said integrated circuit substrate,” and claim 78 was amended to recite “an entire variable speed clock disposed upon said integrated circuit substrate.” (Chen Decl. Ex. 7 ('336 prosecution history, Feb. 10, 1998 Amendment) at 1-2.)

1 *operating parameters of the integrated circuit* containing the Fig. 18 circuit,  
 2 *while the frequency or rate of the Q1, Q2, Q3 and Q4 signals depicted in Magar*  
 3 *Fig. 2a are determined by the fixed frequency of the external crystal* connected  
 to the circuit portion outputting the Q1, Q2, Q3 and Q4 signals shown in Magar  
 Fig. 2a.

4 (*Id.* (emphasis added).) The applicants concluded their argument about Magar by specifically  
 5 distinguishing their claimed system from an external crystal used for frequency control or  
 6 oscillation:

7 The Magar teaching . . . is specifically distinguished from the instant case in that it is both  
 8 fixed frequency (being crystal based) and *requires an external crystal or external*  
*frequency generator.*

9 (*Id.* at 5 (emphasis added) (TPL85300002403).)

10 The applicants' statements to the PTO made clear that the alleged invention requires an  
 11 "entire" on-chip clock or "entire" oscillator that does not rely on an external crystal or external  
 12 frequency generator. Magar's clock generator was repeatedly distinguished as not disclosing the  
 13 claimed "entire" clock because Magar's clock generator relies on an external crystal or external  
 14 frequency generator. The claimed "entire" clocks and "entire" oscillators cannot therefore be  
 15 construed to encompass reliance on an external crystal or external frequency generator. *See*  
 16 *Rheox, Inc. v. Entact, Inc.*, 276 F.3d 1319, 1325 (Fed. Cir. 2002) ("Explicit arguments made during  
 17 prosecution to overcome prior art can lead to a narrow claim interpretation because '[t]he public  
 18 has a right to rely on such definitive statements made during prosecution.'"); *Am. Piledriving*  
 19 *Equip. v. Geoquip, Inc.*, 637 F.3d 1324, 1336 (Fed. Cir. 2011) ("[A]n applicant's argument that a  
 20 prior art reference is distinguishable on a particular ground can serve as a disclaimer of claim  
 21 scope even if the applicant distinguishes the reference on other grounds as well.").<sup>5</sup>

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22

23 <sup>5</sup> The patentee's disclaimers are also consistent with testimony from the named inventors  
 24 describing their alleged invention. Although inventor testimony is not part of the intrinsic record,  
 25 it may be used to "provide background information, including explanation of the problems that  
 existed at the time the invention was made and the inventor's solution to these problems." *Voice*  
 26 *Techs. Group, Inc. v. VMC Sys., Inc.*, 164 F.3d 605, 615-16 (Fed. Cir. 1999). In this case,  
 27 inventor Charles Moore testified that the variable speed clock of the alleged invention would not  
 be connected, directly or indirectly, to a crystal oscillator. (Chen Decl. Ex. 8 (Moore E.D. Tex.  
 Depo.) at 23:15-17 (TPL8531710898).) The other named inventor, Russell Fish, III, agreed.  
 (Chen Decl. Ex. 4 (Fish ITC Depo.) at 201:2-9.) Mr. Fish also testified that the presence of inputs  
 into the variable speed clock or oscillator would indicate a system that did not include the '336  
 clock. (*Id.* at 83:14-84:12.)

**c. The Applicants Also Repeatedly Disclaimed Reliance on Control Signals To Control the Clock**

In addition to disclaiming reliance on an external crystal or clock generator, the applicants also disclaimed reliance on control signals to control the clock or oscillator. The first of these disclaimers occurred in response to the examiner's rejection of the claims in light of U.S. Patent No. 4,670,837 to Sheets ("Sheets"). In attempting to overcome Sheets, the applicants distinguished microprocessors that rely on frequency control information from an external source:

*The present invention does not similarly rely upon provision of frequency control information to an external clock, but instead contemplates providing a ring oscillator clock and the microprocessor within the same integrated circuit. The placement of these elements within the same integrated circuit obviates the need for provision of the type of frequency control information described by Sheets . . . Sheets' system for providing clock control signals to an external clock is thus seen to be unrelated to the integral microprocessor/clock system of the present invention.*

(Chen Decl. Ex. 9 ('336 prosecution history, Apr. 15, 1996 Amendment) at 8 (emphasis added) (TPL85300002473).) In response to a subsequent rejection based on Sheets, the applicants went even further and disclaimed the use of controlled oscillators altogether, regardless of whether the control is on-chip or not:

Even if the examiner is correct that the variable clock in Sheets is in the same integrated circuit as the microprocessor of system 100, *that still does not give the claimed subject matter*. In Sheets, a command input is required to change the clock speed.

(Chen Decl. Ex. 10 ('336 prosecution history, January 8, 1997 Amendment) at 4 (emphasis added) (TPL85300002449).)

Simply having a CPU clock on the chip was not enough, according to the applicants, to meet the claimed invention because controlling the on-chip ring oscillator's speed using a command signal "does not give the claimed subject matter." (*Id.*) Indeed, in response to a subsequent rejection based on Magar, the applicants left no doubt that, unlike "all cited references," the on-chip clock or on-chip oscillator of their purported invention is completely free of inputs and extra components:

Crucial to the present invention is that . . . when the fabrication and environmental parameters vary, the oscillation or clock frequency and the frequency capability of the driven device will automatically vary together. *This differs from all cited references in that . . . the oscillator or variable speed clock varies in frequency but does not require manual or programmed inputs or external or extra components to do so.*

5 (Chen Decl. Ex. 6 ('336 prosecution history, July 7, 1997 Amendment) at 5 (emphasis added)  
6 (TPL85300002429).) This prosecution statement confirms the applicants' clear disclaimer of any  
7 reliance on input control signals. Accordingly, HTC's proposed constructions include the  
8 requirement that the clock or oscillator "does not rely on . . . a control signal to generate a clock  
9 signal," and should be adopted.

**d. HTC's and Judge Gildea's Construction Is Consistent with the Previous Construction by Judge Ward and TPL's Positions in this Litigation**

Judge Gildea is not the only judge who has found that the applicants disclaimed an on-chip clock that relies on a control signal or an external crystal or clock generator to generate a clock signal.<sup>6</sup> The '336 patent was also the subject of prior litigation in the Eastern District of Texas before Judge Ward. *See Tech. Props. Ltd. v. Matsushita Elec. Indus. Co., Ltd.*, 514 F. Supp. 2d 916 (E.D. Tex. 2007). Judge Ward construed an “entire ring oscillator variable speed system clock in said single integrated circuit” of claim 1 as “a ring oscillator variable speed system clock that is located entirely on the same semiconductor substrate as the CPU and does not directly rely on a command input control signal or an external crystal/clock generator to generate a clock signal.” *Id.* at 926. Judge Ward explained: “The Court agrees with the defendants that the applicant disclaimed the use of an input control signal and an external crystal/clock generator to generate a clock signal.” *Id.* (emphasis added).<sup>7</sup>

<sup>6</sup> The ITC Staff Attorney Whitney Winston, a graduate from the Massachusetts Institute of Technology, in this parallel ITC investigation also agrees that HTC's proposed constructions "accurately capture the patentee's clear disclaimer." (Chen Decl. Ex. 11 (02/08/2013 OUII Opening Markman Brief) at 9.)

<sup>7</sup> Judge Ward’s construction largely mirrors the construction adopted by Judge Gildea and proposed by HTC. The only differences are that Judge Gildea did not include certain language from Judge Ward’s construction (“*directly* rely upon,” “*command input* control signal”). Accordingly, while Judge Ward’s prior claim construction correctly recognized the applicant’s disclaimers regarding reliance on an external crystal/clock generator or control signal, the

1           TPL itself acknowledged this disclaimer by repeatedly urging this Court to adopt Judge  
 2 Ward's construction—in at least three claim construction briefs filed with this Court. (See Doc.  
 3 No. 228 at 18 (12/09/2010 TPL Claim Construction Brief); Doc. No. 258 at 18 (02/11/2011 TPL  
 4 Claim Construction Brief); Doc. No. 339 at 19 (12/23/2011 TPL Claim Construction Brief).)  
 5 During the ITC case, however, TPL retreated from its long-standing position and sought a different  
 6 construction. (Chen Decl. Ex. 3 (04/18/2013 Public ITC Order) at 20.)

7           **2.       The HTC Accused Products Do Not Meet the “Entire” Limitations as a**  
 8 **Matter of Law**

9           After the relevant claim language has been construed, the second step in an infringement  
 10 analysis is to compare the accused product with the claim as construed by the Court. *See*  
 11 *Freedman Seating Co.*, 420 F.3d at 1357. TPL can present no evidence to raise a genuine issue of  
 12 material fact as to whether the accused HTC products rely on an external crystal or clock to  
 13 generate a clock signal for the CPU. As shown below, there can be no infringement because the  
 14 accused HTC products operate in precisely the same manner as the prior art distinguished during  
 15 prosecution—they rely on an external crystal or clock to generate a clock signal.

16           According to TPL’s expert, the on-chip clock that TPL contends meets the “entire”  
 17 limitations on all of the accused HTC products is based on a structure known as a “phase-locked  
 18 loop” (“PLL”). TPL contends that the PLLs in the accused HTC products include either a voltage-  
 19 controlled oscillator (“VCO”) or a current-controlled oscillator (“ICO”). (*See* Chen Decl. Ex. 12  
 20 (Oklobdzija 07/13/2013 Depo.) at 56:13-57:23.) These VCOs or ICOs, according to TPL’s expert,  
 21 “directly clock the CPU.” (*Id.* at 57:5-9.)

22           The problem with TPL’s infringement theory, however, is that the oscillators in the  
 23 accused products indisputably rely on an external crystal or clock generator to clock the CPU.  
 24 Similar to a “cruise control” in an automobile that maintains a constant speed, the PLLs and their  
 25 VCOs and ICOs in the accused HTC products maintain a stable CPU frequency. (Declaration of

26  
 27           “directly” and “command input” qualifiers in that construction should not be adopted here  
 28 because there is no support for that specific language from the intrinsic record.

1 Thomas A. Gafford (“Gafford Decl.”) Ex. 1 (Gafford 07/02/2013 Non-Infringement Rep.), ¶ 149.)  
 2 The PLLs accomplish this stability by relying on an input signal from an external signal, known as  
 3 a “reference” signal, that provides a fixed and stable frequency. (Chen Decl. Ex. 12 (Oklobdzija  
 4 07/13/2013 Depo.) at 57:10-15, 57:24-58:18; Chen Decl. Ex. 14 (Oklobdzija 06/04/2013  
 5 Infringement Rep.), ¶ 91 (“That other reference frequency is usually produced externally to the  
 6 chip and that oscillator is encapsulated in a noise free, temperature and voltage controlled  
 7 environment assuring the frequency stability of the reference signal.”).)

8 All of the PLLs in the HTC accused products receive this external “reference” signal,  
 9 according to TPL’s expert, from either an external crystal or an external clock generator. (See  
 10 Chen Decl. Ex. 12 (Oklobdzija 07/13/2013 Depo.) at 58:14-18.) In the words of TPL’s expert,  
 11 “they all must have a reference. That’s essential part of PLL.” (*Id.*; *see also id.* at 59:3-7 (“[I]t’s  
 12 the nature of PLL that must receive a reference. Now, that reference can be either an external  
 13 clock generator or external crystal. In both cases the reference is external.”).)

14 This “reference” signal directly controls the frequency of the on-chip oscillator. In  
 15 particular, the PLL circuitry on the chip takes the external reference signal and “multiplies” it by a  
 16 constant value to obtain a higher frequency. (Chen Decl. Ex. 14 (Oklobdzija 06/04/2013  
 17 Infringement Rep.), ¶ 91.) For example, in the accused Qualcomm MSM7x30 chip, a PLL clocks  
 18 the CPU at a fixed speed of 768 MHz. The PLL circuitry on the chip obtains this frequency by  
 19 taking the reference frequency from the external crystal—19.2 MHz—and multiplying it by 40. A  
 20 PLL maintains this fixed frequency by constantly comparing the frequency of the oscillator to the  
 21 crystal frequency, and correcting the oscillator frequency such that it remains a constant multiple  
 22 of the reference frequency supplied by the crystal. (Gafford Decl. Ex. 1 (Gafford 07/02/2013 Non-  
 23 Infringement Rep.), ¶ 40; *see also* Chen Decl. Ex. 14 (Oklobdzija 06/04/2013 Infringement Rep.),  
 24 ¶ 122 (“The reference clock provides the timing reference used by the PLL. The PLL uses this  
 25 reference to calibrate its own ring oscillator VCO, which generates the clock signal.”).) The  
 26 frequency of the on-chip clock in the accused HTC products, therefore, directly depends on the  
 27 frequency of the external crystal.

28

1           HTC's expert, Mr. Gafford, was also able to empirically confirm that the accused HTC  
 2 products rely on an external crystal/clock generator. (Gafford Decl. Ex. 1 (Gafford 07/02/2013  
 3 Non-Infringement Rep.), ¶¶ 110-15, 203-09.) He ran a series of tests on certain HTC accused  
 4 products in which he was able to increase or decrease the reference frequency and measure its  
 5 effect on the frequency produced by the PLL. (*Id.*) His testing showed a linear relationship  
 6 between the reference frequency and the frequency of the on-chip PLL—if you increase the  
 7 frequency of the reference signal, for example, the frequency of the on-chip PLL increases. (*Id.* ¶¶  
 8 204-09.) And if you decrease the frequency of the reference signal, the frequency of the on-chip  
 9 PLL decreases in direct response. (*Id.*) TPL's expert testified that he was “not surprised” with Mr.  
 10 Gafford's results. (*See* Chen Decl. Ex. 12 (Oklobdzija 07/13/2013 Depo.) at 126:12-127:7.) Nor  
 11 should he have been surprised because “in general it's true if we have a PLL as we have described  
 12 that depends on the reference[, a]nd so if the reference is affected, then the output frequency will  
 13 be affected as well.” (*Id.* at 84:17-22). And these results were not surprising given that the  
 14 accused phones were *designed* to maintain a fixed and stable frequency based on the crystal  
 15 reference.

16           Non-infringement would also be warranted even if the Court applied Judge Ware's  
 17 construction of “an entire variable speed system clock” as to claims 10 and 16, which he construed  
 18 as “a variable speed clock that is located *entirely* on the same semiconductor substrate as the  
 19 central processing unit.” (Doc. No. 364, at 19 (emphasis added).) As explained previously, the  
 20 PLL and the external crystal are inextricably intertwined components of the clocking mechanism  
 21 for the CPU. Because it is undisputed that the crystal is not on the same semiconductor substrate  
 22 as the accused oscillator, TPL cannot show that the clock is located entirely on the same substrate  
 23 as required under Judge Ware's construction. As the applicants emphasized in discussing the  
 24 “entire” terms in the '336 patent during the original prosecution, “while most of Magar's clock  
 25 (generator) circuitry is on the IC, the entire oscillator, which because it requires an external crystal,  
 26 is not.” (Chen Decl. Ex. 7 ('336 prosecution history, Feb. 10, 1998 Amendment) at 4 (emphasis  
 27 added) (TPL85300002402).)

28

1           A finding of non-infringement, as noted previously, is entirely consistent with the  
 2 prosecution history in which the applicant argued that Magar was “distinguished from the instant  
 3 case in that it is both fixed frequency (being crystal based) and *requires an external crystal or*  
 4 *external frequency generator.*” (*Id.* at 5 (TPL85300002403).) “Claims may not be construed one  
 5 way in order to obtain their allowance and in a different way against accused infringers.”  
 6 *Southwall Techs., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1576 (Fed. Cir. 1995). For all of these  
 7 reasons, therefore, TPL cannot establish infringement of the ’336 patent, literally or under the  
 8 doctrine of equivalents, as a matter of law.

9           B.     **The Accused HTC Products Also Do Not Satisfy the “Varying” Limitations as**  
 10           **a Matter of Law**

11           The accused HTC products do not infringe for another reason that is separate from the  
 12 “entire” limitations discussed above. Each independent claim of the ’336 patent requires that the  
 13 variable speed clock or oscillator be “varying” based on the PVT parameters as follows:

Claim Term from the ’336 Patent (in Underlining with Surrounding Language)
“a processing frequency capability of said central processing unit and <u>a speed of said</u> ring oscillator variable speed system <u>clock varying</u> together <u>due to said manufacturing variations and due to at least operating voltage and temperature</u> of said single integrated circuit” (claims 1, 11)
“ <u>varying</u> the processing frequency of said first plurality of electronic devices and <u>the clock rate</u> of said second plurality of electronic devices in the same way <u>as a function of parameter variation in one or more fabrication or operational parameters</u> associated with said integrated circuit substrate” (claims 6, 13)
“said processing frequency and <u>said clock rate varying</u> in the same way <u>relative to said variation in said one or more fabrication or operational parameters</u> associated with said integrated circuit substrate” (claims 10, 16)

23           As shown in the chart above, the requirement may be stated in slightly different language  
 24 in the independent claims, but the underlying requirement is the same—the speed or clock rate of  
 25 the claimed variable speed clock or oscillator must be “varying” with the PVT parameters.

26           Summary judgment is appropriate because TPL has offered no evidence whatsoever to  
 27 show that the claimed “clock” or “oscillator” is “varying” with the PVT parameters as recited in  
 28

1 the claims. The sum total of TPL's analysis in its expert report for these "varying" limitations,  
 2 aside from parroting the claim language, is the assertion that one of ordinary skill in the art would  
 3 understand the variation to exist for the accused products "based on generally accepted principles  
 4 relating to semiconductor ICs." (See, e.g., Chen Decl. Ex. 15 (Appendix K to Oklobdzija  
 5 06/04/2013 Infringement Rep.), Ex. HTC-A-1 at page 5 of 30.) TPL's expert did not perform  
 6 further analysis or apply these "generally acceptable principles" to any accused product. Nor did  
 7 TPL's expert perform any testing to determine whether this variation actually exists in the accused  
 8 HTC products. (See Chen Decl. Ex. 12 (Oklobdzija 07/13/2013 Depo.) at 70:13-16.) And when  
 9 asked at his deposition whether he had investigated whether it would be possible to do such a test,  
 10 he responded: "**I haven't had time to do it.**" (*Id.* at 71:10-14.) This was a remarkable statement  
 11 coming from an expert witness who has been working on this case for more than six years. (Chen  
 12 Decl. Ex. 13 (Oklobdzija 07/15/2013 Depo.) at 402:10-13.)

13       In any event, HTC's expert did perform a series of tests on accused HTC products to  
 14 assess whether the variation required by the claim occurs. (Gafford Decl. Ex. 1 (Gafford  
 15 07/02/2013 Non-Infringement Rep.), ¶¶ 145-169.) For example, Mr. Gafford tested the frequency  
 16 of the PLL that clocks the CPU of a Qualcomm MSM7x30 chip through temperature variations  
 17 from -5°C to 55°C (23°F to 131°F). (*Id.* ¶ 153.) His testing found that the frequency variance was  
 18 only +/- 0.00043%, the kind of tightly-controlled frequency that is, for intents and purposes, a  
 19 fixed speed clock signal like a crystal. (*Id.*) Mr. Gafford also tested and showed similar stability  
 20 of +/- 0.0003% and +/- 0.00033% in the frequencies of the two PLLs that clock the CPUs in two  
 21 separate Qualcomm MSM8655 chips (*id.*, ¶ 158), presumably having process variations between  
 22 them. In fact, TPL's expert, when asked what kind of variance he would expect to see from  
 23 crystals chosen by phone manufacturers today, he estimated that the variation would be between 4  
 24 and 12 parts per million over a similar temperature range (0.0004% to 0.0012%). (See Chen Decl.  
 25 Ex. 12 (Oklobdzija 07/13/2013 Depo.) at 89:21-90:1; 92:20-93:10.) The PLLs' frequency  
 26 variations in Mr. Gafford's test results certainly fall within this range. These results should hardly  
 27 be surprising given that the accused HTC products, as noted above, have PLLs specifically  
 28 designed to operate within tight tolerances and produce fixed, stable frequencies.

1           The frequency variation of the claimed “variable speed” clock or oscillator envisioned in  
 2 the '336 specification, in sharp contrast, can be “a factor of two” or “a factor of four” (200% to  
 3 400%). (See '336, 16:43-46 (“The result are [sic] designs that must be clocked a factor of two  
 4 slower than their maximum theoretical performance . . . .”), 16:60-63 (“At room temperature, the  
 5 frequency will be in the neighborhood of 100 MHZ. At 70 degrees Centigrade, the speed will be  
 6 50 MHZ.”), 17:21-22 (“Speed may vary by a factor of four depending upon temperature, voltage,  
 7 and process.”).) The variation observed by Mr. Gafford (+/-0.0003% to +/-0.00043%) falls well  
 8 within what the specification and prosecution history expressly consider to be the kind of  
 9 “minimal” variances in a reference crystal. The file history confirms that the type of minuscule  
 10 variations exhibited by the accused HTC products do not meet the “varying” claim limitations. As  
 11 the applicants explained in distinguishing the Magar reference: “Crystals are by design fixed  
 12 frequency devices whose oscillation speed is designed to be tightly controlled and to vary  
 13 minimally due to variations in manufacturing, operating voltage and temperature. The Magar  
 14 microprocessor in no way contemplates a variable speed clock as claimed.” (Chen Decl. Ex. 6  
 15 ('336 prosecution history, July 7, 2997 Amendment) at 3-4 (TPL85300002427-28).) TPL has  
 16 offered no proof whatsoever that the accused PLL and its VCO or ICO varies beyond the  
 17 “minimally” expected variance of a crystal clock.

18 **V. TPL CANNOT SHOW WILLFUL INFRINGEMENT OF THE '336 PATENT**

19           Because TPL cannot establish infringement of the '336 patent, its claim for willful  
 20 infringement necessarily fails. But even if a genuine issue of material fact existed on the issue of  
 21 infringement of the '336 patent (which it does not), the Court should dispose of TPL's baseless  
 22 willful infringement claim on summary judgment because, at every relevant time period, HTC had  
 23 clear, legitimate, and objectively reasonable defenses to TPL's claims.

24           The Federal Circuit has held that a showing of willful infringement requires that the  
 25 plaintiff establish by clear and convincing evidence (1) that the accused infringer “acted despite an  
 26 objectively high likelihood that its actions constituted infringement of a valid patent,” and (2) that  
 27 this objectively defined risk “was either known or so obvious that it should have been known to  
 28 the accused infringer.” *In re Seagate Tech., LLC*, 497 F.3d 1360, 1371 (Fed. Cir. 2007) (*en banc*).

1           TPL cannot establish either prong because it has proffered no evidence whatsoever of  
 2 willful infringement. HTC propounded an interrogatory specifically asking TPL to identify its  
 3 evidence and the complete factual basis for its allegation of willful infringement against HTC.  
 4 (See Chen Decl. Ex. 17 (TPL's Response to HTC Interrogatory No. 9) at 22.) TPL's response  
 5 included a parade of groundless objections but provided no substantive response. (*Id.*) TPL never  
 6 supplemented its response to this interrogatory, and fact discovery closed long ago.

7           Moreover, the evidence affirmatively establishes that TPL could not establish willful  
 8 infringement even if it had responded to HTC's interrogatory. Under the objective prong of the  
 9 willful infringement analysis, "a patentee must show by clear and convincing evidence that the  
 10 infringer acted despite an objectively high likelihood that its actions constituted infringement of a  
 11 valid patent." *In re Seagate Tech., LLC*, 497 F.3d at 1371. "The state of mind of the accused  
 12 infringer is not relevant to this objective inquiry." *Id.* This objective determination entails an  
 13 assessment of the reasonableness of the accused infringer's defenses, such as its arguments about  
 14 non-infringement. *See Bard Peripheral Vascular, Inc. v. W.L. Gore & Assocs., Inc.*, 682 F.3d  
 15 1003, 1006 (Fed. Cir. 2012).

16           The Federal Circuit recently made clear that this objective prong presents a legal question  
 17 suitable for summary judgment. "When a defense or noninfringement theory asserted by an  
 18 infringer is purely legal (e.g., claim construction), the objective recklessness of such a theory is a  
 19 purely legal question to be determined by the judge." *Id.* at 1007. Even in those instances when  
 20 the objective prong turns on factual issues, "the judge remains the final arbiter of whether the  
 21 defense was reasonable, even when the underlying fact question is sent to a jury." *Id.*

22           TPL's willful infringement claim fails as a matter of law under the objective prong  
 23 because HTC had reasonable non-infringement and invalidity defenses. As explained above, HTC  
 24 had clear non-infringement arguments based on a claim construction that has been adopted by two  
 25 different judges. Both Judge Gildea's and Judge Ward's constructions require that the "entire"  
 26 clock not rely upon an external crystal or clock generator. *See* Part IV.A above. HTC's view of  
 27 the file history, coupled with the undisputed operation of its products, provided a more than  
 28 reasonable basis for its defense of non-infringement.

1           Although the ITC Investigation is still ongoing, the assigned ITC Staff Attorney Whitney  
 2 Winston, a graduate from the Massachusetts Institute of Technology, has concluded that that HTC  
 3 does not infringe the '336 patent. (See Chen Decl. Ex. 16 (OUII Post Hearing Brief) at 1.) HTC's  
 4 non-infringement position was clearly sufficiently compelling and reasonable that a neutral ITC  
 5 Staff attorney, who represents neither side, agreed with that position. (*Id.*) Despite differences in  
 6 the accused products, TPL and HTC are advancing substantially the same theories of infringement  
 7 and non-infringement in both the ITC and the district court cases. The Staff's opinion validates  
 8 the objective reasonableness of HTC's position on non-infringement of the '336 and negates  
 9 Defendants' ability to establish by clear and convincing evidence that HTC's actions were  
 10 "objectively reckless."

11           Because HTC'S non-infringement defenses were objectively reasonable—in fact, more  
 12 than sufficient to warrant summary judgment—TPL's entire willful infringement claim fails. *See*  
 13 *Bard Peripheral Vascular, Inc.*, 682 F.3d at 1006 (satisfying objective prong is a “threshold  
 14 determination” for a finding of willfulness).

15 **VI. CONCLUSION**

16           For the foregoing reasons, HTC respectfully requests that the Court grant summary  
 17 judgment of non-infringement and no willful infringement with respect to the '336 patent.

18  
 19 Dated: July 16, 2013

Respectfully submitted,

20  
 21 COOLEY LLP  
 22 HEIDI L. KEEFE  
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